

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/064243 A1

(51) International Patent Classification⁷: H02P 7/28, 7/622

(21) International Application Number:

PCT/IB2004/000027

(22) International Filing Date: 9 January 2004 (09.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
VI2003A000002 9 January 2003 (09.01.2003) IT

(71) Applicant (for all designated States except US):
POSITEC GROUP LIMITED [CN/CN]; 28th Floor, Bank of East Asia, Harbour View Centre, 56 Gloucester Road, Wanchai, HONG KONG (CN).

(72) Inventor; and

(75) Inventor/Applicant (for US only): ANDRIOLI, Paolo [IT/IT]; VIA SABBIONI, 18, I-36051 CREAZZO (IT).

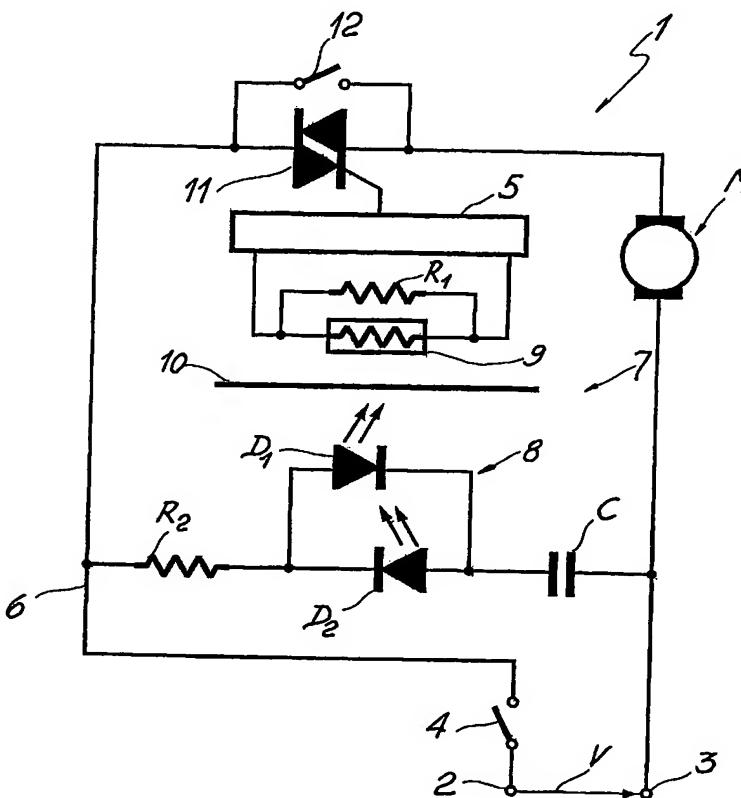
(74) Agent: MAROSCIA, Antonio; MAROSCIA & ASSOCIATI SRL, Contr# S. Caterina, 29, I-36100 VICENZA (IT).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CONTROL DEVICE FOR VARIABLE SPEED ELECTRIC MOTORS, PARTICULARLY FOR POWER TOOLS



(57) Abstract: A device for controlling variable speed electric motors, particularly for hand held power tools and other miniaturised electrically powered apparatuses, comprises an electronic driver unit (5) connectable to the terminals (2, 3) of an electric power source for supplying electric current to at least one electric motor (M) and an optical switch device (7) for triggering the electronic driver unit (5). The optical switch device (7) comprises light emitting means (8) and light transducer means (9) for detecting and converting light into an electric variable signal. The light transducer means (9) are operatively connected to the electronic driver unit (5) for controlling the electric motor (M). The light emitter means (8) comprise at least one white light, high brightness LED (D1, D2) connected in parallel to the electric power line terminals (2, 3) by means of a miniaturised power circuit. The miniaturised power circuit comprises at least one resistor (R2) when said at least one electric motor (M) is a DC motor, and a capacitive phase displacement power supply (C, R2) when said electric motor is an AC motor. The capacitive phase displacement power supply (C, R2) comprises at least one capacitor (C) and an input resistor (R2) adapted to supply said diodes (D1, D2) with a threshold voltage.